

IN THE CLAIMS

What is claimed is:

1. An apparatus for performing a surgical anastomosis, comprising
a tubular body having a distal end and a proximal end and defining a longitudinal
5 axis, the tubular body including an expandable anchor provided near the distal end thereof
and an expandable cuff provided near the distal end of the tubular body and proximal of
the expandable anchor; and
a joining member configured and adapted to be received about the expandable
cuff of the tubular body, the joining member having an annular body portion including a
10 pair of opposed terminal edges, wherein the joining member has a retracted position in
which the pair of opposed terminal edges overlap by a predetermined amount and an
expanded position in which the pair of opposed terminal edges overlap by an amount less
than the predetermined amount.
- 15 2. The apparatus according to claim 1, wherein the expandable anchor has a
first position in which the expandable anchor has a radius substantially equal to a radius
of the tubular body and a second position in which the expandable anchor has a radius
which is larger than the radius of the tubular body.
- 20 3. The apparatus according to claim 2, wherein the expandable cuff has a first
position in which the expandable cuff has a radius substantially equal to a radius of the
tubular body and a second position in which the expandable cuff has a radius which is
larger than the radius of the tubular body.
- 25 4. The apparatus according to claim 3, wherein the joining member includes
at least one annular array of openings formed through the annular body portion.
5. The apparatus according to claim 4, wherein the joining member includes
at least one tab extending from a first of the pair of terminal edges of the annular body
30 portion, wherein the at least one tab is configured and adapted to be received within an
opening of the at least one linear array of openings.
6. The apparatus according to claim 5, wherein each opening is defined by a
pair of opposed side walls transversely oriented with respect to the longitudinal axis, a

longitudinally oriented angled proximal wall and a longitudinally oriented angled distal wall, wherein the proximal wall is angled such that an upper edge thereof is closer to the at least one tab than a lower edge thereof and the distal wall is angled such that an upper edge thereof is closer to the at least one tab than a lower edge thereof.

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7. The apparatus according to claim 6, wherein each tab extends tangentially and distally from the first of the pair of terminal edges of the joining member and terminates in an angled terminal distal edge.

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8. The apparatus according to claim 7, wherein the joining member includes a guide rail formed on an inner surface of the annular body portion along either side of the at least one array of openings, wherein the guide rails slidably receive the at least one tab therebetween.

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9. The apparatus according to claim 8, wherein the joining member includes a distal and a proximal terminal edge.

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10. The apparatus according to claim 9, wherein the joining member includes a guide channel formed near a second of the pair of terminal edges of the annular body portion.

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11. The apparatus according to claim 10, wherein the guide channel is defined by a pair of side walls extending radially inward from the distal and proximal terminal edges of the annular body.

12. The apparatus according to claim 11, wherein the guide channel is further defined by an end wall interconnecting the terminal ends of the pair of side walls.

13. The apparatus according to claim 11, wherein the joining member includes a plurality of flanges extending radially outward from at least one of the distal and proximal terminal edges thereof.

14. The apparatus according to claim 11, wherein the joining member includes a plurality of projections formed along an outer surface of the annular body portion.

15. The apparatus according to claim 11, wherein the expandable cuff of the tubular body is configured and adapted to press against an inner surface of the annular body portion of the joining member in order to expand the joining member from the retracted position to the expanded position.

16. The apparatus according to claim 1, wherein the joining member is fabricated from a bio-absorbable material.

17. The apparatus according to claim 1, wherein the joining member is fabricated from a shape memory alloy.

18. The apparatus according to claim 1, wherein the joining member includes a unidirectional coupling pair including at least one opening formed near a first of the pair of terminal edges and a plurality of projections formed along the outer surface of the annular body portion, each of the plurality of projections being configured and adapted to be received within the at least one opening to allow the joining member to go from the retracted position to the expanded position.

19. The apparatus according to claim 1, further comprising a holder tube having a distal end and a proximal end, the holder tube being configured and dimensioned to be received about the tubular body and the joining member when in the retracted position.

20. A method for performing a surgical anastomosis, comprising the steps of: providing an apparatus for performing an anastomotic procedure, the apparatus comprising:

a tubular body having a distal end and a proximal end, the tubular body including an expandable anchor provided near the distal end thereof and an expandable cuff provided near the distal end of the tubular body and proximal of the expandable anchor; and

a joining member configured and adapted to be received about the expandable cuff of the tubular body, the joining member having an annular body portion including a pair of opposed terminal edge, wherein the joining member has a retracted

position in which the pair of opposed terminal edges overlap by a predetermined amount and an expanded position in which the pair of opposed terminal edges overlap by an amount less than the predetermined amount;

5 passing the apparatus through a body lumen and through an opening in a body vessel such that the expandable anchor of the tubular body is positioned within the body vessel;

 expanding the expandable anchor of the tubular body such that the expandable anchor of the tubular body has a radius which is larger than an opening of the body vessel;

10 withdrawing the tubular body until the body vessel contacts a distal end of the body lumen;

 positioning the joining member over the expandable cuff at a location which extends between at least a portion of the body vessel and at least a portion of the body lumen; and

15 expanding the expandable cuff of the tubular body against the inner surface of the joining member to expand the joining member against at least the portion of the body vessel and at least the portion of the body lumen to secure the joining member into position.

20 21. The method according to claim 20, further comprising the step of retracting the expandable anchor and the expandable cuff.

 22. The method according to claim 21, further comprising the step of withdrawing the tubular body from the body vessel and the body lumen.

25 23. The method according to claim 20, wherein the surgical anastomosis is a radical prostatectomy.

 24. The method according to claim 23, wherein the body vessel is the bladder
30 and the body lumen is the urethra.

 25. The method according to claim 24, including the step of removing the prostate gland from between the urethra and the bladder to define a urethral stump and a bladder neck.

26. A radially expandable joining member, comprising:

an annular body portion defining a longitudinal axis, the annular body portion including a distal terminal edge, a proximal terminal edge and a first and a second side terminal edge, wherein each of the first and the second side terminal edges is
5 longitudinally oriented;

at least one annular array of openings formed in the annular body; and

at least one locking tab extending tangentially from the first side terminal edge, each locking tab being in registration with a respective array of openings formed in the
10 annular body and receivable in the openings of the at least one annular array of openings, wherein the joining member has a first position wherein the annular body has a first diameter and a second position wherein the annular body has a second diameter which is larger than the first diameter, wherein the at least one locking tab inhibits the annular
15 body from returning to the first diameter, once expanded to the second diameter, by being received in an opening of the at least one array of openings.

27. The joining member according to claim 26, including two annular arrays of openings formed in the annular body and two tabs extending tangentially from the first side edge, wherein the two tabs are configured and dimensioned to be received, one each,
20 within a respective opening formed in the annular body.

28. The joining member according to claim 27, further including guide rails formed, one each, along each side of the two annular arrays of openings formed in the annular body.
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29. The joining member according to claim 28, further including a guide channel formed near the second side terminal edge of the annular body.

30. The joining member according to claim 29, wherein the guide channel is
30 defined by a pair of side walls extending radially inward from the distal end proximal terminal edges of the annular body.

31. The joining member according to claim 30, wherein the guide channel is further defined by an end wall interconnecting the terminal ends of the pair of side walls.

32. The joining member according to claim 31, further including a plurality of flanges extending radially outward from at least one of the distal and proximal terminal edges thereof.